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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/614,864

07/09/2003

Yasuo Inoue

29284/593

8161

7590

02/09/2006

KENYON & KENYON

Suite 700

1500 K Street, N.W.

Washington, DC 20005

EXAMINER

CHEN, ALAN S

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/614,864	<b>Applicant(s)</b> INOUE, YASUO	
	<b>Examiner</b> Alan S. Chen	<b>Art Unit</b> 2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11/22/2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/22/2005 has been entered.

***Allowable Subject Matter***

2. The indicated allowability of claim 1-15 is withdrawn in view of the amendment to independent claim 1. The amendment changes the scope of the claims. Specifically, the previous reasons for allowance were partially based on the premise that *at least* two processors controlled the transfer between the control unit and plurality of cache units (see Office Action mailed 04/12/2005). The Examiner now applies reference US Pat. No. 5,325,488 to Carteau et al. (Carteau) submitted in the IDS on 07/11/2005 to show anticipation of the current claims. Carteau did not show two processors controlling one control unit that communicates with multiple cache units (Fig. 1, for example, PR1 is the only dedicated processor for the control unit UC1). However, because this limitation was removed in the amendment, Carteau now anticipates the claims as shown below.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

Art Unit: 2182

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Carteau.

5. As per claim 1, Carteau discloses a storage system (Fig. 1) comprising a channel unit (Fig. 1, element HA1 or HA2 is the host adapter which is directly linked with the link channel, CE, hence, being the channel unit; Fig. 1 and Column 4, lines 25-35 disclose the Host, e.g., the upper level system, communicating with the storage system via the host adapter which controls/interfaces the link channel, CE) that transfers data sent from an upper-level system (Fig. 1, host are shown as H1, H2, etc) and transfers data to said upper-level system (Fig. 1, channels CE clearly shown as bidirectional), a plurality of cache units (Fig. 1, CA1 and CA2 are cache units) connected to said channel unit (buses B1 and B2 connect the host adapter/channel unit to cache unit) and in which data sent from said channel unit is stored (Column 16, lines 60-65 expressly disclose caches being dual access), a control unit (Fig. 1, UC1 and UC2 each are independent control units; Column 3, lines 55+) that is connected to said cache units (cache units are integrally connected with the control unit, UC via at minimum, the two buses B1 and B2 shown in Fig. 1), and transfers or receives data to or from said cache units (B1 and B2 are bidirectional); at least one first processor controlling transfer of data between said channel unit

and said plurality of cache units (Fig. 3, element MPH1, Column 6, lines 23+ discloses host adapter, HA, having a processor that controls the functions of the host adapter, primarily transferring data from the Hosts to the storage devices), one second processor (Fig. 1, PR1 or PR2) controlling transfer of data between said control unit and said plurality of cache units (Column 10, lines 65+, processors control the operations of the control unit, e.g., transfers of data to cache units), a disk device in which data sent from said control unit is stored (Fig. 1,

Art Unit: 2182

elements D1-D6), and a plurality of paths connecting said channel unit to said plurality of cache units (B1 and B2 are the paths connecting channel units, HAs, to cache, CAs)

6. As per claims 2-10 and 14, Carteau discloses claim 1, further disclosing two buses, B1 and B2 in Fig. 1 that are not bridged and are therefore independent of each other, each bus attached to the cache units, CA. Buses B1 and B2 allow control by the host adapter, HA, at one point in the system to communicate with the cache unit, existing at another point in the system. There are two buses B1,B2 and two caches CA1,CA2.

7. As per claim 11, Carteau discloses claim 1, further disclosing said disk device includes a plurality of disk drives (Fig. 1, elements D1-D6), and said control unit is connected to said plurality of disk drives (Fig. 1, UCs have buses B1 and B2 connecting the disk drives via a disk adapter DA.).

8. As per claims 12, 13 and 15, Carteau discloses claim 1, further discloses the said plurality of paths are signal lines (buses/channels Bx, CEx are all by definition signal lines) linking said cache unit and said channel units that enable the upper-level system to communicate with the disk device which entails reading and writing data using commands, to and from storage (Host and the various processors in Fig. 1 inherently use read/write commands to retrieve/send data from one place to another).

### ***Conclusion***

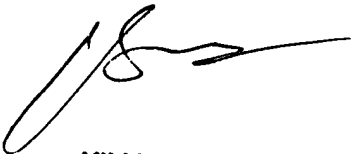
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 8:30am - 5:30pm.

Art Unit: 2182

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASC  
02/03/2006



**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**  
2/3/06